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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,969	10/24/2003	Ralph Kurt	081468-0306353	6969
909	7590	05/16/2005	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			MATHEWS, ALAN A	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2851	

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,969

Applicant(s)

KURT, RALPH

Examiner

Alan A. Mathews

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/24/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The document SG 72598 on Applicant's IDS filed October 24, 2003, has been crossed out, since no document was submitted that identifies itself as SG 72598. If Applicant wants document SG 72598 considered, he/she should submit another IDS properly identifying the document and submit a copy of the document.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moors et al. (U. S. Patent Application Publication No. 2002/0109828 A1) in view of the Japanese patent document JP 06230194 (cited on Applicant's PTO-1449). Moors et al. discloses in figure 1 and paragraph #s 64-70, an illuminator LA and IL for providing a projection beam. Support structure MT holds patterning device MA. Substrate table WT holds substrate W. Paragraph # 67 discloses that the projection system PL could be a mirror system. Thus, Moors et

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al. discloses the invention except for disclosing that the projection system has a layer comprising Buckminsterfullerenes. It is noted that in paragraph # 21 of the specification of the instant application, it states that **“Buckminsterfullerene” is also termed “fullerene”**. The Japanese patent document JP 06230194 discloses in the Abstract and in the machine translation (cited on the Examiner’s PTO-892), a mirror with a layer 1 having fullerene C60. Under the section “DETAILED DESCRIPTION”, on page 4, the machine translation disclosing applying the reflective mirrors to X-ray lithography. The outer layer 1 could be considered a capping layer, since it is on top. Figure 7 discloses a multi-layer mirror. With respect to claim 15, paragraph # 4 under DETAILED DESCRIPTION of the machine translation discloses using a wavelength of about 40A. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the reflective projection system in Moors et al. with a fullerene (Buckminsterfullerene) layer in view of the Japanese patent document JP 06230194 for the purpose of shortening the exposure time (since the layer has such a high reflectance factor), and thus improving productivity.

4. Claims 1-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babsonneau et al. (U. S. Patent No. 6,724,465) in view of the Japanese patent document JP 06230194 (cited on Applicant’s PTO-1449). Babsonneau et al. discloses in figure 3 an illuminator for providing a projection beam. Mirrors 24, 26, and 29 are mirrors which have multiple layers (see figure 10). Substrate support 16 holds substrate 18. Mask 24 (patterning device) is supported by a support structure. Thus, Babsonneau et al. discloses the invention except for disclosing that the mirrors of the projection system has a layer comprising

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Buckminsterfullerenes. It is noted that in paragraph # 21 of the specification of the instant application, it states that **“Buckminsterfullerene” is also termed “fullerene”**. The Japanese patent document JP 06230194 discloses in the Abstract and in the machine translation (cited on the Examiner’s PTO-892), a mirror with a layer 1 having fullerene C60. Under the section **“DETAILED DESCRIPTION”**, on page 4, the machine translation disclosing applying the reflective mirrors to X-ray lithography. The outer layer 1 could be considered a capping layer, since it is on top. Figure 7 discloses a multi-layer mirror. With respect to claim 15, paragraph # 4 under DETAILED DESCRIPTION of the machine translation discloses using a wavelength of about 40A. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the reflective projection system in Babsoneau et al. with a fullerene (Buckminsterfullerene) layer in view of the Japanese patent document JP 06230194 for the purpose of shortening the exposure time (since the layer has such a high reflectance factor), and thus improving productivity.

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moors et al. (U. S. Patent Application Publication No. 2002/0109828 A1) in view of the Japanese patent document JP 06230194 as applied to claim 21 above, and further in view of Dougherty et al. (U. S. Patent No. 5,391,329). Moors et al. discloses the invention except for disclosing that the optical element is a sensor. Dougherty et al. discloses in the Abstract and in column 1, line 19, and column 2, lines 16, a sensor having a Buckminsterfullerene film. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to the

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modified device of Moors et al. and the Japanese patent document JP 06230194 with a Buckminsterfullerene film in view Dougherty et al. for the purpose of better protection.

Conclusion

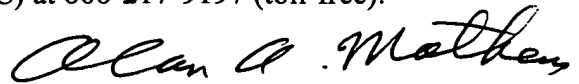
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents cited in the PTO-1449 are cited for the same reasons they were cited in Information Disclosure Statement. The patent to O'Donnell et al. (U. S. Patent No. 6,790,242) is cited to show the matured patent of the U. S. Patent Application Publication No. 2002/0086553 A1. The English machine translation of the Japanese patent documents 6-230194, 11-084093, and 8-5795 are cited to further elucidate the underlying Japanese patent documents.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan A. Mathews
Primary Examiner
Art Unit 2851

AM